Cognitive function after Bone Marrow Transplant (BMT): How to manage disruptions

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Incidence and duration of cognitive disruptions

- On average, acute changes (< 90 days) improve with time after transplant* (recovery on all but motor tasks by 1 yr)
- 20-28% may have more chronic moderate severe difficulty**
- 50% may have mild long-term disruption**

*Syrrjala, Dikmen, et al., 2004 (Blood)
**Jim, Small, Hartman, et al., 2011 (Cancer)
What causes cognitive disruption after BMT?

- Pre-treatment vulnerabilities
- Medication side effects
- Primary CNS effects upon white matter
  - Chemotherapy effects
  - Radiation effects
- Mechanisms of disruption
  - Inflammatory response?
  - Autoimmune effects?
What can further aggravate cognitive disruption?

- Sleep disturbance
- Reduced food intake
- Fatigue, reduced endurance, lack of exercise
- Pain
- Reactive depression, anxiety, irritability, grief
- Neurobehavioral change: Regulation of affect
- Financial stressors
- Disruption in normal roles and routines
Medications sometimes used to support improved cognition

- Ritalin (methylphenidate) or other stimulant medications for attention
- Amantadine for fatigue
- Trazadone for improved sleep
- Anti-depressants if depression a factor
- Meds for depression or anxiety work best with psychotherapy treatment
Common cognitive problems among chemotherapy patients

- Complex attention
  - Screening out distractions
  - Multi-tasking
- Memory acquisition & retrieval (not storage)
- Speed of information processing
- Executive functions
  - Planning, organizing and project completion
  - Trial and error reasoning
  - Drawing inferences
  - Efficiency of verbal expression
What can help?
Step One: NPE

- Neuropsychological Evaluation (NPE)
  - Identify residual strengths and weaknesses
    - Thinking
    - Behavior
    - Personality and Emotions
    - Role of past education and work experience
    - Level of family and friend support
    - Combination of neurologic and stress factors typically found
What can help?
Step Two – Neuro-Rehab Tx

- Neuro-Rehabilitation treatment menu
  - Cognitive Rehabilitation
  - Physical Therapy
  - Occupational Therapy
  - Psychotherapy
  - Vocational Rehabilitation
  - Home Organizer assistance
  - MD Rehab Consultation
Step Three
What helps in day to day life?

- Establish consistent daily routines
  - Regular wake and sleep time
  - Meal time + good nutrition
  - Exercise
  - What is your best time of day for focus?
- Use one central memory book
  - Smart phone, Daytimer, Week at a Glance
  - Appointments, To Do List, Rest Times
Step Four: Improve efficiency of thought and action

- Getting the main idea practice
  - Summarize newspaper articles
  - Telegram technique
  - Take notes for fact-based TV shows

- Efficiency of verbal expression
  - Stop, think, respond
  - Organize your thoughts
  - Strategies for attention and memory
Strategies for attention and memory

- **Attention**
  - Reduce distractions
    - Visual, auditory, internal
  - Establish daily and weekly routines

- **Memory**
  - Take effective notes and review them
    - Main ideas, relevant details, To-Do list
  - Schedule To-Do items in your planner
ABODES System for organizing projects

- Assess situation or project
- Break it into steps
- Organize the steps
- Decide what materials, help, needed
- Estimate the time it will take (x 2.7!) and schedule the time
- Survey your work, recalibrate plan
Choose one new strategy

- Problem with talks like these:
  - You have heard this before
  - It is easier to think about it than to do it

- What to do about it
  - Choose one strategy for implementation
  - Practice and refine it for a week or two
  - Measure the practical effect
  - Work with a cog rehab specialist, e.g., SLP
QUESTIONS?